

REMARKS

Applicants respectfully request further examination and reconsideration in view of the instant response. Claims 1-12, 14-19 and 21-29 remain pending in the case. Claims 1-12, 14-18 and 25-29 are rejected. Claims 19 and 21-24 are allowed. Claims 1, 8 and 25 are amended herein. No new matter has been added. Support for the amendments can be found in the instant specification at least at page 9, line 9, through page 10, line 9, and page 13, line 22, through page 15, line 2.

ALLOWABLE SUBJECT MATTER

Applicants wish to thank the Examiner for the indication that Claims 19 and 21-24 are allowed.

103(a) Rejections - Claims 1-11, 14 and 16-18

The Office Action mailed September 25, 2008, hereinafter referred to as the "instant Office Action," states that Claims 1-11, 14 and 16-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim (U.S. Patent Application Publication No. 2002/0126752) in view of Vetro et al. ("Vetro"; U.S. Patent No. 7,170,932). The Applicants have reviewed the cited references and respectfully submit that the embodiments recited in Claims 1-11, 14 and 16-18 are patentable over Kim and Vetro, alone or in combination, for at least the following rationale.

Applicants respectfully direct the Examiner to independent Claim 1 that recites that an embodiment of the present invention is directed to (emphasis added):

A method for reducing the resolution of media data, said method comprising:

- accessing compressed input data for a frame of a plurality of frames, wherein said frame is at a first resolution and comprises a plurality of macroblocks, wherein said plurality of macroblocks comprises a plurality of subsets of macroblocks that are to be encoded as a single output macroblock;
- selecting a data processing function according to the number of macroblocks in a subset of said plurality of subsets that are characterized as intra-coded, wherein said selecting is performed for each of said plurality of subsets;
 - if all of said macroblocks in said subset are characterized as intra-coded, downsampling said subset of macroblocks in a compressed domain to generate said single output macroblock comprising compressed downsampled data at a second resolution that is reduced relative to said first resolution;
 - if less than all of said macroblocks in said subset are characterized as intra-coded and if said number of macroblocks in said subset characterized as intra-coded satisfies said threshold, decompressing only macroblocks of said subset of macroblocks that are not intra-coded, compressing said subset of macroblocks, and downsampling said subset of macroblocks in said compressed domain to generate said single output macroblock comprising compressed downsampled data at said second resolution that is reduced relative to said first resolution;
 - if said number of macroblocks in said subset characterized as intra-coded does not satisfy said threshold, decompressing said subset of macroblocks, downsampling said subset of macroblocks, and encoding said subset of macroblocks to generate said output macroblock comprising compressed downsampled data at said second resolution that is reduced relative to said first resolution, wherein said accessing, said selecting and said downsampling are performed prior to transmitting over a wireless network; and
- transmitting said output macroblock comprising compressed downsampled data to a wireless device over said wireless network.

Independent Claim 8 recites a similar embodiment. Claims 2-7 that depend from independent Claim 1 and Claims 9-11, 14 and 16-18 that depend from independent Claim 8 also include these embodiments.

“As reiterated by the Supreme Court in *KSR*, the framework for the objective analysis for determining obviousness under 35 U.S.C. 103 is stated in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). Obviousness

is a question of law based on underlying factual inquiries” including “[a]scertaining the differences between the claimed invention and the prior art” (MPEP 2141). “In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious” (emphasis in original; MPEP 2141.02(I)). Applicants note that “[t]he prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art” (emphasis added; MPEP 2141(III)).

Applicants respectfully submit that “[i]t is improper to combine references where the references teach away from their combination” (emphasis added; MPEP 2145(X)(D)(2); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). Applicants respectfully note that “[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention” (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)). Applicants respectfully submit that there is no motivation to combine the teachings of Kim and Vetro, because Kim teaches away from the suggested modification.

Moreover, Applicants note that “[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not

sufficient to render the claims *prima facie* obvious” (emphasis added) (MPEP 2143.01; *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)). Moreover, “[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed amendment” (emphasis added) (MPEP 2143.01; *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

First, Applicants respectfully submit that Kim does not teach, describe or suggest “if all of said macroblocks in said subset are characterized as intra-coded, downsampling said subset of macroblocks in a compressed domain to generate said single output macroblock comprising compressed downsampled data at a second resolution that is reduced relative to said first resolution” and “if less than all of said macroblocks in said subset are characterized as intra-coded and if said number of macroblocks in said subset characterized as intra-coded satisfies said threshold, decompressing only macroblocks of said subset of macroblocks that are not intra-coded, compressing said subset of macroblocks, and downsampling said subset of macroblocks in said compressed domain to generate said single output macroblock comprising compressed downsampled data at said second resolution that is reduced relative to said first resolution” (emphasis added) as claimed.

Applicants understand Kim to disclose a video transcoding apparatus (Abstract). As recited in Kim, “a video transcoding apparatus according to the present invention includes a video decoder receiving to decode a compressed video bit stream so as to restore a pixel value of an original scene” (emphasis added; [0047]). With reference to Figure 3 of Kim, “a bit stream parsed through

the VLD unit 11 of the video decoder 103 passes through the IQ unit 12, IDCT unit 13, adder 14, and motion compensating unit 16 so as to be stored in the external memory 15” (emphasis added; [0088]). In particular, Applicants respectfully submit that Kim discloses that “the video pre-processing unit 300 may receive an MPEG-2 bit stream, which is video-decoded in the video decoder 103” (emphasis added; [0087]).

Applicants respectfully submit that Kim discloses that video pre-processing unit 300 receives a fully decoded MPEG-2 bit stream, and performs all preprocessing on the fully decoded stream. Specifically, Applicants respectfully submit that the downscaling of video pre-processing unit 300 is performed on fully decoded (decompressed) data (see [0116]). Therefore, by specifically disclosing that downscaling is performed on the fully decoded data, Applicants respectfully submit that Kim teaches away from the claimed embodiment.

Moreover, Applicants respectfully note that the prior Office Action mailed March 17, 2008, recited that Kim “is silent in regards to explicit of, compressed down-sampled data; in other words, the down-sampling takes place in effect in the compressed domain” (Office Action mailed March 17, 2008; page 4, lines 11-13).

Second, Applicants respectfully submit that there is no motivation to combine the teachings of Kim and Vetro, because Kim teaches away from the suggested modification. Applicants understand Vetro to disclose a video

transcoder wherein “[e]ach from of the decoded bitstream is down-sampled by down-conversion block 1750” (emphasis added; col. 18, lines 13-14).

Applicants respectfully note that Vetro does disclose down-sampling in the DCT domain at col. 13, lines 1-40. However, Applicants note that this down-sampling in the DCT domain requires the use of the use of a mixed block processor “to pre-process selected macroblocks to ensure that the down-sampling process do not generate macroblocks in which its sub-blocks have different coding modes, e.g., inter- and intra-blocks” (col. 10, lines 41-45), as shown in Figures 10, 11A and 11B. In particular, Applicants respectfully submit that Vetro does not teach, describe or suggest “if all of said macroblocks in said subset are characterized as intra-coded, downsampling said subset of macroblocks in a compressed domain to generate said single output macroblock comprising compressed downsampled data at a second resolution that is reduced relative to said first resolution” and “if less than all of said macroblocks in said subset are characterized as intra-coded and if said number of macroblocks in said subset characterized as intra-coded satisfies said threshold, decompressing only macroblocks of said subset of macroblocks that are not intra-coded, compressing said subset of macroblocks, and downsampling said subset of macroblocks in said compressed domain to generate said single output macroblock comprising compressed downsampled data at said second resolution that is reduced relative to said first resolution” (emphasis added) as claimed.

Third, Applicants respectfully submit that modifying Kim to perform downscaling on macroblocks having DCT coefficients as disclosed in Vetro would change the principle of operation of Kim. Moreover, such a modification would render Kim inoperable for its intended purpose.

Accordingly, Applicants respectfully submit that the basis for rejecting independent Claims 1 and 8 under 35 U.S.C. § 103(a) is traversed and that, as a result, Claims 1 and 8 are in condition for allowance. Furthermore, Applicants respectfully submit that the basis for rejecting Claims 2-7, 9-11, 14 and 16-18 under 35 U.S.C. § 103(a) is also traversed as these claims depend from allowable base claims, and consequently Claims 2-7, 9-11, 14 and 16-18 are also in condition for allowance.

103(a) Rejections - Claims 12, 15 and 25-29

The instant Office Actions states that Claims 12, 15 and 25-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kim in view of Vetro, further in view of Brusewitz (U.S. Patent Application Publication No. 2003/0021345). The Applicants have reviewed the cited references and respectfully submit that the embodiments recited in Claims 12, 15 and 25-29 are patentable over Kim, Vetro and Brusewitz, alone or in combination, for at least the following rationale.

Claims 12 and 15 are dependent on independent Claim 8 and include the recitations of independent Claim 8. Hence, by demonstrating that independent Claim 8 is patentable over Kim, Vetro and Brusewitz,, it is also

demonstrated that Kim, Vetro and Brusewitz, do not show or suggest the embodiments of Claims 12 and 15.

First, as presented above, Applicants respectfully submit that the combination of Kim and Vetro does not establish a *prima facie* case of obviousness because Kim and Vetro, as a whole, do not teach, describe or suggest “if all of said macroblocks in said subset are characterized as intra-coded, downsampling said subset of macroblocks in a compressed domain to generate said single output macroblock comprising compressed downsampled data at a second resolution that is reduced relative to said first resolution” and “if less than all of said macroblocks in said subset are characterized as intra-coded and if said number of macroblocks in said subset characterized as intra-coded satisfies said threshold, decompressing only macroblocks of said subset of macroblocks that are not intra-coded, compressing said subset of macroblocks, and downsampling said subset of macroblocks in said compressed domain to generate said single output macroblock comprising compressed downsampled data at said second resolution that is reduced relative to said first resolution” (emphasis added) as recited in Claim 1. Applicants respectfully note that Claims 8 and 25 recite a similar embodiments.

Second, Applicants respectfully submit that the combination of Kim, Vetro and Brusewitz does not establish a *prima facie* case of obviousness. Applicants note that Brusewitz also does not teach, describe or suggest the embodiments of Claims 8 and 25.

Third, Applicants respectfully submit that there is no motivation to combine the teachings of Kim and Brusewitz, because the suggested combination would change the principle of operation of Kim. As described above, Applicants understand Kim to specifically disclose that downscaling is performed on the fully decoded data. Applicants respectfully submit that the principle of operation of Kim is to perform downscaling on fully decoded data. As presented above, Kim discloses that “a bit stream parsed through the VLD unit 11 of the video decoder 103 passes through the IQ unit 12, IDCT unit 13, adder 14, and motion compensating unit 16 so as to be stored in the external memory 15” (emphasis added; [0088]). Moreover, Applicants submit that Kim discloses that motion compensating unit 16 performs frame prediction or field prediction on the fully decoded data ([0198]). Therefore, Applicants submit that the principle of operation of Kim is to perform pre-processing (e.g., downsampling) on fully decoded data. Furthermore, by specifically disclosing that downscaling is performed on the fully decoded data, Applicants respectfully submit that Kim teaches away from the suggested modification.

In contrast, Applicants understand Brusewitz to disclose downscaling a compressed video stream ([0010]). However, Applicants respectfully submit that modifying Kim to perform downscaling a compressed video stream as disclosed in Brusewitz would change the principle of operation of Kim. Moreover, such a modification would render Kim inoperable for its intended purpose.

Accordingly, Applicants respectfully submit that the basis for rejecting independent Claims 8 and 25 under 35 U.S.C. § 103(a) is traversed and that, as a result, Claims 8 and 25 are in condition for allowance. Furthermore, Applicants respectfully submit that the basis for rejecting Claims 12, 15 and 26-29 under 35 U.S.C. § 103(a) is also traversed as these claims depend from allowable base claims, and consequently Claims 12, 15 and 26-29 are also in condition for allowance.

CONCLUSION

In light of the above remarks, Applicants respectfully request reconsideration of the rejected claims. Based on the arguments presented above, Applicants respectfully assert that Claims 1-12, 14-18 and 25-29 overcome the rejections of record, and therefore Applicants respectfully solicit allowance of these claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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